

## A Dropsonde Glider with Adaptive Trajectory Planning, Phase I

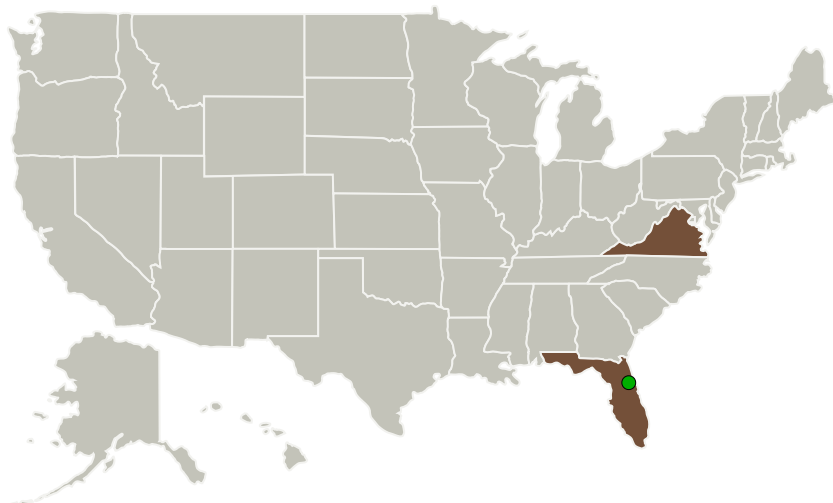
Completed Technology Project (2012 - 2012)




## Project Introduction

Dropsondes are one of the primary atmospheric measurement tools available to researchers. Current dropsondes are deployed with a free fall parachute trajectory, allowing no flight path control and requiring the deployment aircraft to fly close to the target. Adding a guided range capability to the dropsonde will allow much greater mission flexibility and operation in hazardous environments such as volcanic plumes. Barron Associates, Inc. will accomplish this through a scaled down version of a glide-kit harness currently being developed for use with sonobuoys. In addition, a suite of trajectory generation algorithms will be developed to facilitate controlled flight through areas of interest, along with the guidance and control routines to track the desired trajectory. The solution will be compatible with all existing dispensing systems, including the P-3 and the Global Hawk, and will address airspace utilization, materials and manufacturing concerns and cost. The Phase I effort will include prototype manufacture and piloted flight tests.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Barron Associates, Inc.	Lead Organization	Industry	Charlottesville, Virginia
 Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida



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## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

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## Primary U.S. Work Locations

Florida

Virginia

## Project Transitions

 **February 2012:** Project Start

 **August 2012:** Closed out

### Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137815>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Barron Associates, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

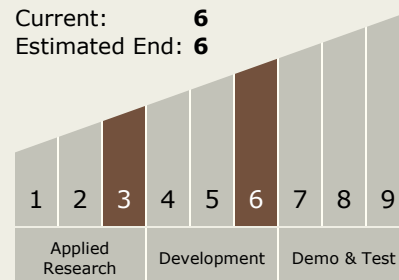
Carlos Torrez

### Principal Investigator:

David Neal

## Technology Maturity (TRL)

Start: 3  
Current: 6  
Estimated End: 6



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## Technology Areas

### Primary:

- TX15 Flight Vehicle Systems
  - └ TX15.2 Flight Mechanics
    - └ TX15.2.1 Trajectory Design and Analysis

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System